

# Colorado Basin Outlook Report May 1, 2001



# Basin Outlook Reports

## and

### Federal - State - Private

### Cooperative Snow Surveys

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*For more water supply and resource management information, contact:*

**Michael A. Gillespie**  
**Data Collection Office Supervisor**  
**USDA, Natural Resources Conservation Service**  
**655 Parfet St., Rm E200C**  
**Lakewood, CO 80215-5517**  
**Phone (720) 544-2852**

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#### *How forecasts are made*

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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# COLORADO WATER SUPPLY OUTLOOK REPORT MAY 1, 2001

## Summary

No significant improvements in Colorado's snowpack were measured on May 1. In most basins the percent of average snowpack decreased from the April 1 readings. Although it's not over yet, it appears that the 2001 water year will not be one of those where spring storms make a significant contribution to the snowpack and the state's water supplies. Most of the state is now assured of below average streamflow volumes for the coming spring and summer. In many respects this year has been similar to last year in many areas. The exception to this is southwestern Colorado, which fortunately, is a complete reversal of last year's conditions. Reservoir storage remains in good condition and may help to supplement the low flows in some basins.

## Snowpack

Colorado's statewide snowpack, as a percent of average, decreased slightly during April as dry and warm conditions decreased the amount of new snowfall, while contributing to melting at lower elevations. Currently, the snowpack is 84% of average, while last month's statewide snowpack was 87% of average. Several basins decreased significantly from last month. Those include the Yampa and White, Gunnison, and Colorado. Only one basin, the Rio Grande, increased significantly from last month, and continues to have the highest percent of average in the state. As a general trend, the present snowpack is below average across most of western Colorado and improves to near average, to above average east of the Continental Divide. Across the northern tier of the state the snowpack is generally below, to well below average. While most people's impression is that there is more snow this year than last year, surprisingly, many of the basins snowpack measurements are actually less this year than last year. These basins include the Colorado, South Platte, Yampa, White, and North Platte. At the same time, snowpack measurements in basins in southwestern Colorado are two to three times that of last year. Overall, the statewide snowpack is 123% of last year's on this date.

## Precipitation

Precipitation at high elevation SNOTEL sites was above average nearly statewide during April. Only the South Platte Basin received below average monthly total, at 94% of average. The highest totals, as a percent of average, were measured in the Gunnison Basin, at 180% of

average. This was closely followed by the San Juan, Animas, Dolores, and San Miguel basins, at 149% of average. Statewide, for the month of April, precipitation was 116% of average. Totals for the first seven months of the 2001 water year are below average in all basins except those in the south west portion of the state. Water year totals range from 86% of average in the Colorado Basin, to 108% of average in the Rio Grande and the combined San Juan, Animas, Dolores, and San Miguel basins. Water year totals for the state are now 94% of average.

## Reservoir Storage

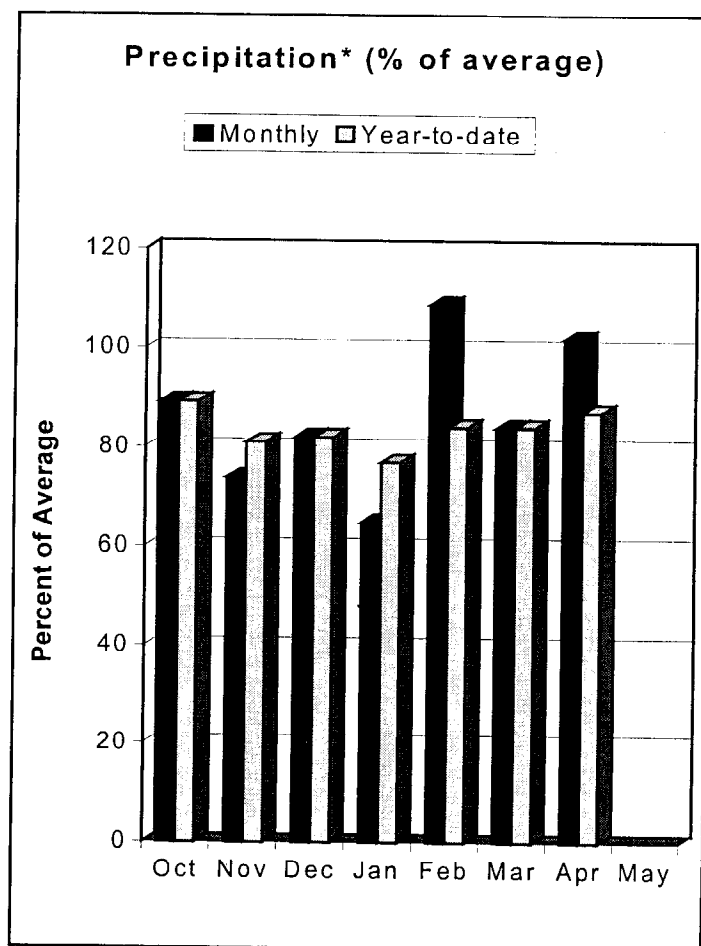
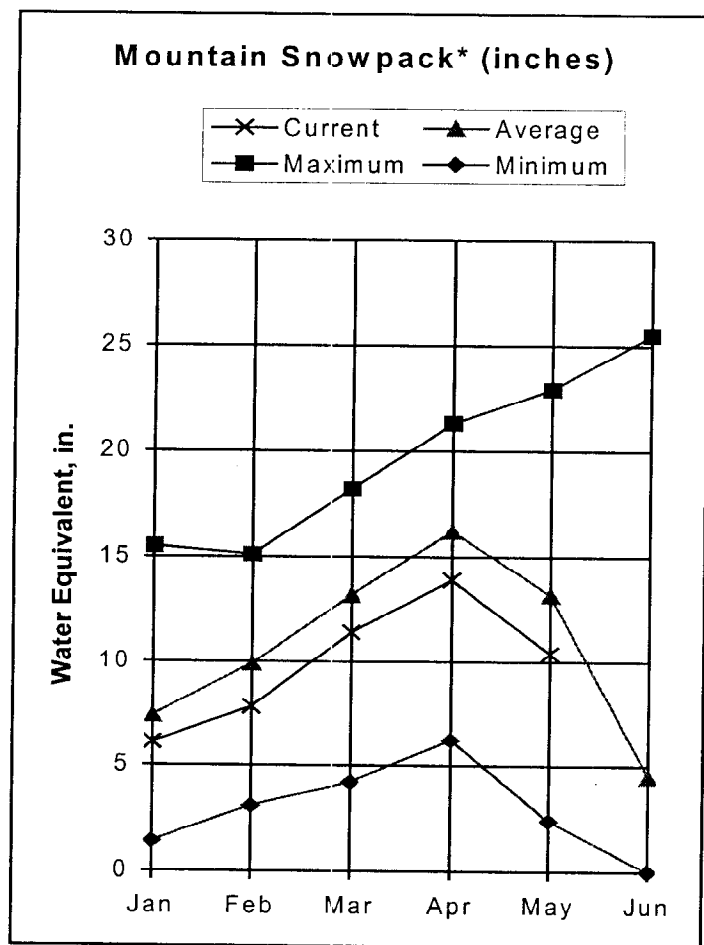
Reservoir storage changed only slightly from last month across the state. Currently, the statewide reservoir storage is 107% of average and is 76% of last year's May 1 storage. This above average storage is equivalent to nearly 218,000 acre feet. Storage in most basins is above average, with below average storage reported only in the South Platte, and the San Juan, Animas, Dolores, and San Miguel basins. As a rule, storage remains well below that of last year at this time in all basins. The lowest percent of last year is in the Arkansas Basin at only 61% of last year's volumes. However, this basin also continues to report the highest percent of average storage in the state at 159%. Although the statewide storage decreased by only 1% from last month, the actual storage increased by nearly 9000 acre feet during April. Statewide, this year's storage is down by nearly 1.1 million acre feet from last year at this time.

## Streamflow

With only a few exceptions, Colorado can expect to see below, to well below average runoff across the state this spring and summer. Those basins across northern Colorado can expect to see the lowest runoff as compared to the long-term average. Meanwhile, the best outlook for summer runoff occurs across south-central Colorado. This portion of the state can expect near to above average runoff this year. Although severe shortages are not anticipated anywhere in the state, this year's runoff will be far from spectacular. In years like this, summer precipitation becomes a more critical water supply component. A lack of summer precipitation, similar to last year, will greatly compound the water supply deficits across the state. On the other hand, plentiful and steady summer precipitation will greatly reduce irrigation demands and many water users may not notice the reduced runoff.

# GUNNISON RIVER BASIN

## as of May 1, 2001



\*Based on selected stations

Although some significant storms during April have provided some much appreciated snow to the Gunnison Basin, the inevitable spring thaw has definitely begun, and snowpack levels have decreased during the month leaving the remaining accumulation at only 76% of average on May 1. Despite the low percent of average there is 27% more snow this year than last year at the same time. The Uncompahgre Watershed has the highest snowpack percent of average at 84%, while the Upper Gunnison Watershed is only 73% of average. Precipitation measured at the 12 SNOTEL sites in the basin was 102% of average during April. The total precipitation received this water year is only 87% of average, which is 8% more than last water year on May 1. The combined storage for 8 major reservoirs in the basin is 21% above average for this time of year. There is 15% less storage than last year on May 1. Most of the streamflow forecasts are very nearly the same as last month's forecasts. They are highly variable ranging from only 56% of average on Surface Creek near Cedaredge, to 133% of average on Cochetopa Creek below Rock Creek.

GUNNISON RIVER BASIN  
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Taylor River blw Taylor Park Resv	APR-JUL	46	60	70	71	80	94	99
Slate River nr Crested Butte	APR-JUL	63	68	71	80	74	79	89
East River at Almont	APR-JUL	95	116	130	71	144	165	183
Gunnison River nr Gunnison	APR-JUL	171	218	250	67	282	329	375
Tomichi Creek at Sargents	APR-JUL	9.9	15.2	18.9	57	23	28	33
Cochatopa Creek blw Rock Creek	APR-JUL	17.3	21	23	133	25	29	17.3
Tomichi Creek at Gunnison	APR-JUL	31	44	53	69	63	80	77
Lake Fork at Gateview	APR-JUL	105	117	125	102	133	145	123
Blue Mesa Reservoir Inflow	APR-JUL	366	464	530	76	596	694	699
Paonia Reservoir Inflow	MAR-JUN	42	50	56	55	62	71	101
	APR-JUL	35	45	52	50	60	72	104
N.F. Gunnison River nr Somerset	APR-JUL	133	160	180	63	201	234	288
Surface Creek nr Cedaredge	APR-JUL	6.8	8.0	9.0	56	10.1	11.9	16.0
Ridgway Reservoir Inflow	APR-JUL	63	73	80	82	88	101	98
Uncompahgre River at Colona	APR-JUL	72	88	100	79	113	133	126
Gunnison River nr Grand Junction	APR-JUL	604	810	950	66	1090	1296	1448

GUNNISON RIVER BASIN  
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
BLUE MESA	830.0	458.4	554.9	334.5
CRAWFORD	14.3	7.4	10.8	12.2
FRUITGROWERS	4.3	4.1	4.4	4.0
FRUITLAND	9.2	2.7	2.3	4.8
MORROW POINT	121.0	108.1	112.7	110.4
PAONIA	18.0	8.1	6.5	8.2
RIDGWAY	83.2	67.8	82.7	63.1
TAYLOR PARK	106.0	64.6	72.3	57.7

GUNNISON RIVER BASIN  
Watershed Snowpack Analysis - May 1, 2001

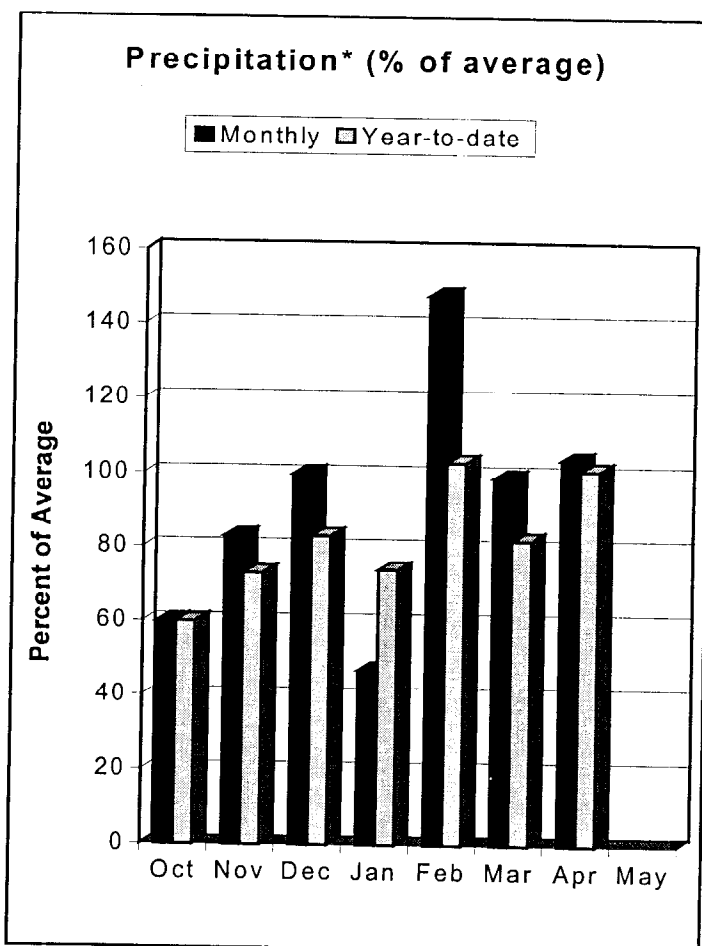
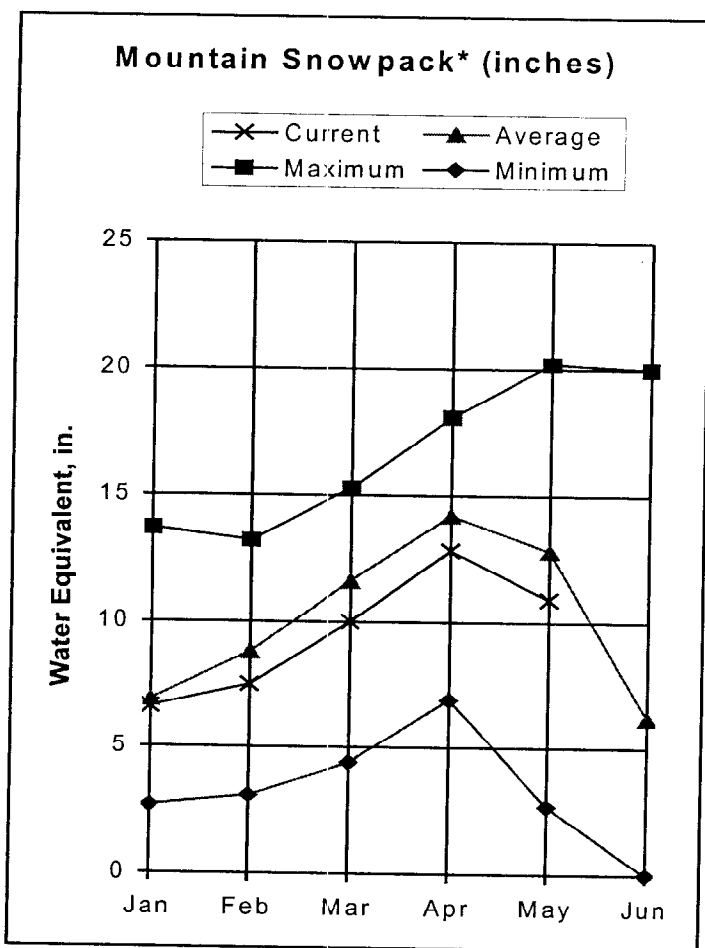
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
UPPER GUNNISON BASIN	11	122	73
SURFACE CREEK BASIN	2	123	74
UNCOMPAHGRE BASIN	4	145	84
TOTAL GUNNISON RIVER BASIN	15	127	76

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

## UPPER COLORADO RIVER BASIN as of May 1, 2001



\*Based on selected stations

Two large storms during mid-April provided additional snow accumulation to the Colorado Basin. But despite the storms, warm temperatures during the month have caused the spring melt to get well under way, and measured snowpack amounts have decreased significantly since last month dropping the overall percent of average from 86% last month, to only 79% on May 1. There is 4% less snow than last year at this time. Measurements range from only 61% of average in the Muddy Creek Watershed, to 100% of average in the Williams Fork Watershed. Precipitation in the higher elevations of the basin was 103% of average during April, and the water year total has been boosted to 86% of average on May 1, which is only 93% of the precipitation last year on the same date. The combined storage from 8 major reservoirs in the basin is about 10% above average on May 1, but this is only 80% of the storage amount last year at this time. Most of the streamflow forecasts for the upcoming runoff season remain nearly the same as last month's forecasts. Forecasts range from only 66% of average at the Roaring Fork at Glenwood Springs, to 99% of average at the Inflow to Dillon Reservoir.

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UPPER COLORADO RIVER BASIN  
Streamflow Forecasts - May 1, 2001

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Forecast Point	Forecast Period	<----- Drier ----- Future Conditions ----- Wetter ----->						
		Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Lake Granby Inflow	APR-JUL	145	159	170	79	181	199	214
Willow Creek Reservoir Inflow	APR-JUL	26	33	39	78	45	55	50
Williams Fork Reservoir inflow	APR-JUL	68	78	85	97	92	104	88
E.F. Troublesome Creek nr Troublesom	APR-JUL	7.9	11.4	13.8	75	16.2	19.7	18.5
Dillon Reservoir Inflow	APR-JUL	122	138	150	99	162	178	151
Green Mountain Reservoir inflow	APR-JUL	215	239	255	97	272	298	262
Muddy Creek blw Wolford Mtn. Resv.	APR-JUL	41	46	50	78	54	61	64
Eagle River blw Gypsum	APR-JUL	179	202	220	71	239	270	310
Colorado River nr Dotsero	APR-JUL	829	1020	1150	84	1280	1471	1362
Ruedi Reservoir Inflow	APR-JUL	71	86	97	71	110	133	136
Roaring Fork at Glenwood Springs	APR-JUL	329	393	440	66	490	568	671
Colorado River nr Cameo	APR-JUL	1203	1523	1740	76	1957	2277	2287

UPPER COLORADO RIVER BASIN Reservoir Storage (1000 AF) - End of April					UPPER COLORADO RIVER BASIN Watershed Snowpack Analysis - May 1, 2001			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
DILLON	250.8	198.5	222.2	203.8	BLUE RIVER BASIN	8	91	86
LAKE GRANBY	465.6	273.0	366.5	220.8	UPPER COLORADO RIVER BASI	29	94	84
GREEN MOUNTAIN	139.0	43.7	63.1	49.7	MUDDY CREEK BASIN	3	79	61
HOMESTAKE	43.0	19.1	28.9	15.1	PLATEAU CREEK BASIN	2	123	74
RUEDI	102.0	67.9	63.6	59.8	ROARING FORK BASIN	7	93	64
VEGA	32.0	13.9	24.4	16.0	WILLIAMS FORK BASIN	4	108	100
WILLIAMS FORK	96.8	52.6	68.7	43.0	WILLOW CREEK BASIN	2	82	95
WILLOW CREEK	9.0	6.0	6.6	6.0	TOTAL COLORADO RIVER BASI	38	96	79

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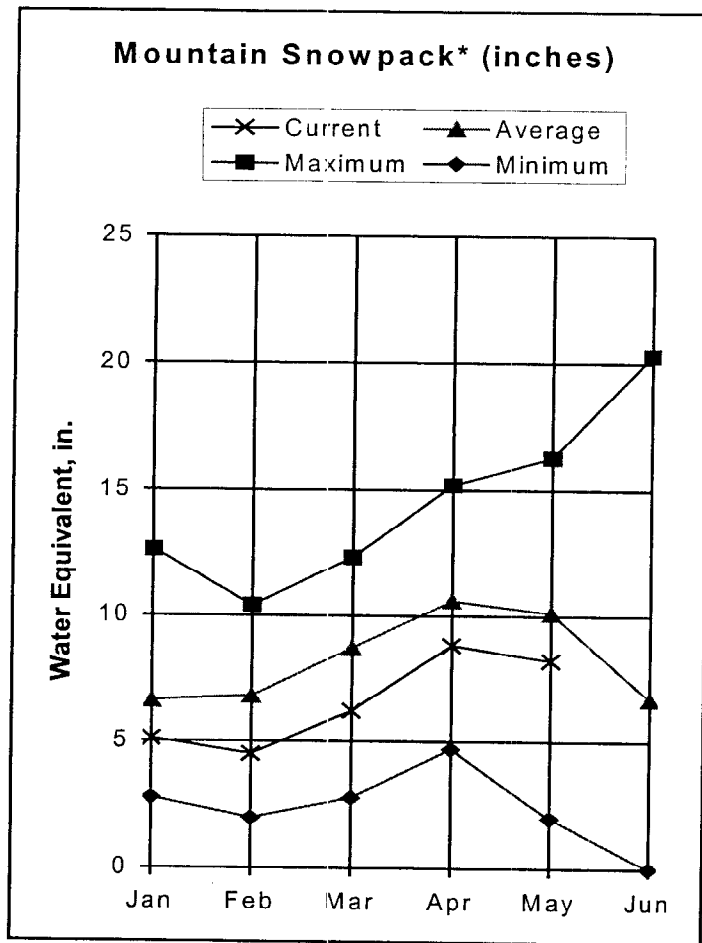
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

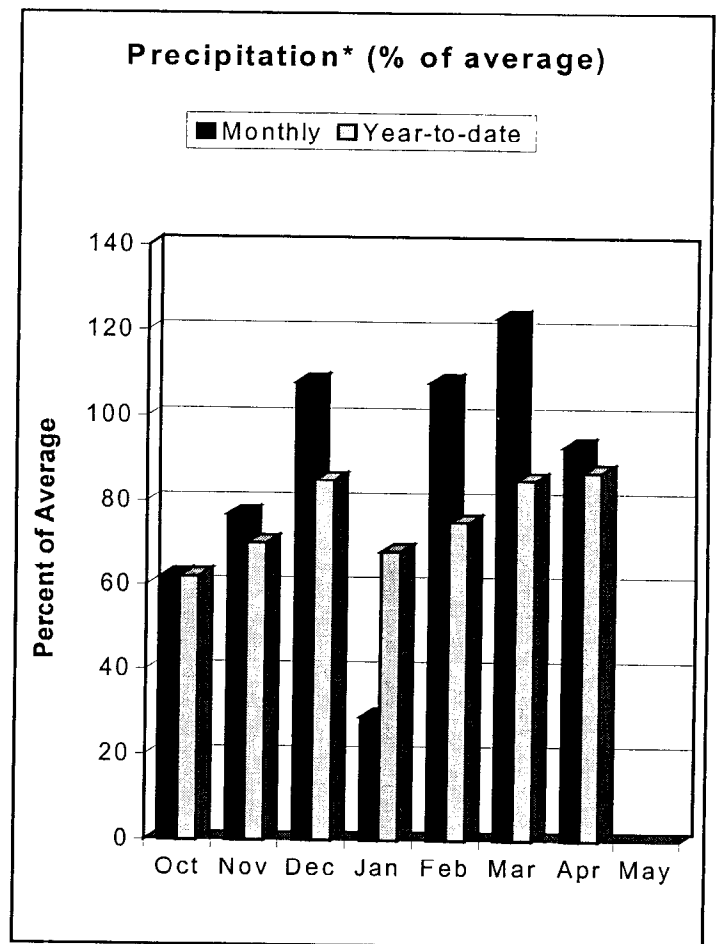
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.



# SOUTH PLATTE RIVER BASIN as of May 1, 2001



\*Based on selected stations



The spring snowmelt is well under way in the South Platte Basin on May 1, but large snow producing storms during April have allowed the snow accumulation in the South Platte Basin to remain at nearly the same percent of average on May 1 that it was on April 1. Measured snow accumulation is 80% of average, which is only 1% of average less than last month. There is 8% less snow than last year at this time. There was 93% of average precipitation during the month of April, and the water year total is at only 87% of average, which is 13% less than last year on May 1. The combined reservoir storage for 32 major reservoirs in the basin remains nearly the same as last month at 88% of average May 1. There is 14% less storage than last year at this time. Most of the streamflow forecasts remain nearly the same as last month's, and all of them are below average. Forecasts range from 66% of average at the Inflow to Antero Reservoir, to 89% of average at South Boulder Creek near Eldorado Springs.

SOUTH PLATTE RIVER BASIN  
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>										
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)		10% (1000AF)		30-Yr Avg. (1000AF)
Antero Reservoir inflow	APR-JUL	4.0	5.9	7.7	66	10.0	14.7	11.7				
Spinney Mountain Reservoir inflow	APR-JUL	18.9	25	30	79	36	48	38				
Elevenmile Canyon Reservoir inflow	APR-JUL	18.1	25	30	79	35	42	38				
Cheesman Lake inflow	APR-JUL	46	57	65	77	75	91	84				
South Platte River at South Platte	APR-SEP	96	137	165	78	193	234	213				
Bear Creek at Morrison	APR-SEP	17.7	23	26	87	29	34	30				
Clear Creek at Golden	APR-SEP	88	102	111	87	120	134	128				
St. Vrain Creek at Lyons	APR-SEP	41	53	61	78	69	81	78				
Boulder Creek nr Orodell	APR-SEP	35	40	43	83	46	51	52				
South Boulder Creek nr Eldorado Spri	APR-SEP	23	33	40	89	47	57	45				
Big Thompson River at mouth nr Drake	APR-SEP	64	77	86	75	95	108	114				
Cache La Poudre at Canyon Mouth	APR-SEP	125	164	190	70	228	283	272				

SOUTH PLATTE RIVER BASIN  
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
ANTERO	20.0	20.0	20.0	14.7
BARR LAKE	32.0	29.2	28.9	27.3
BLACK HOLLOW	8.0	2.4	4.0	4.3
BOYD LAKE	49.0	22.3	41.9	36.7
CACHE LA POUDRE	10.0	8.4	10.0	8.7
CARTER	108.9	102.2	100.8	102.3
CHAMBERS LAKE	9.0	3.5	5.5	3.7
CHEESMAN	79.0	59.2	71.4	60.6
COBB LAKE	34.0	9.0	17.5	14.1
ELEVEN MILE	97.8	100.1	101.2	92.0
EMPIRE	38.0	34.2	33.4	32.8
FOSSIL CREEK	12.0	9.9	6.5	8.1
GROSS	41.8	14.9	27.6	21.5
HALLIGAN	6.4	3.0	5.5	5.3
HORSECREEK	16.0	14.8	14.5	14.7
HORSETOOTH	149.7	38.5	102.6	120.5
JACKSON	35.0	26.0	23.6	33.1
JULESBURG	28.0	18.4	17.1	22.6
LAKE LOVELAND	14.0	11.6	12.0	10.1
LONE TREE	9.0	8.8	8.8	7.6
MARIANO	6.0	5.3	5.6	5.1
MARSHALL	10.0	7.7	9.6	6.3
MARSTON	13.0	10.9	7.8	8.5
MILTON	24.0	21.0	20.3	17.2
POINT OF ROCKS	70.0	70.6	65.6	68.6
PREWITT	33.0	24.6	22.6	24.4
RIVERSIDE	63.1	56.0	52.6	58.1
SPINNEY MOUNTAIN	48.7	20.9	33.6	33.9
STANDLEY	42.0	31.2	41.2	29.1
TERRY LAKE	8.0	5.6	6.5	5.7
UNION	13.0	11.7	12.1	11.1
WINDSOR	19.0	11.0	15.0	12.7

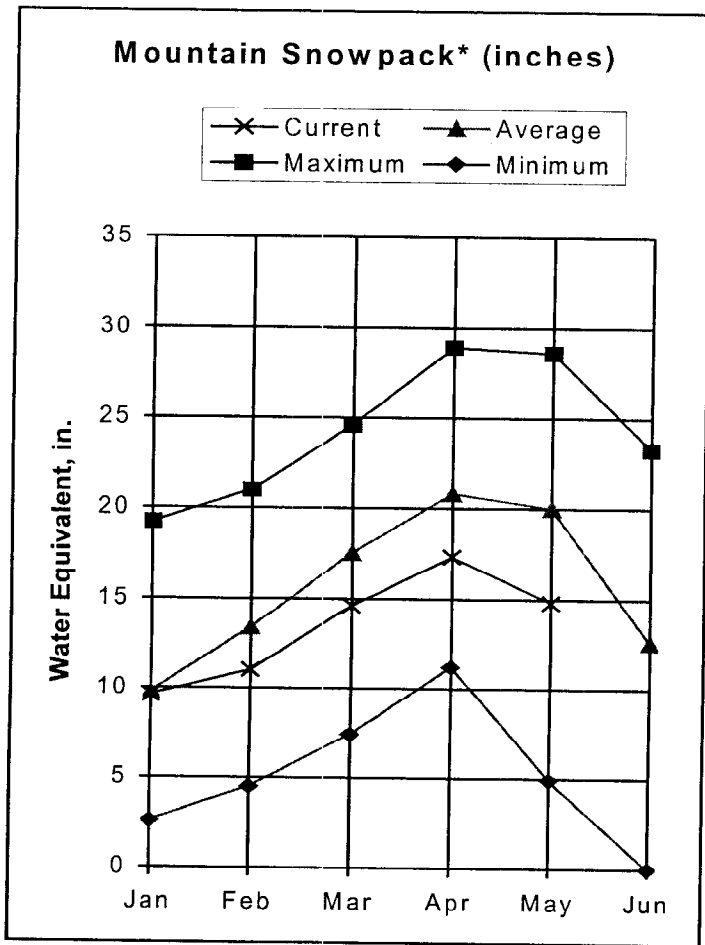
SOUTH PLATTE RIVER BASIN  
Watershed Snowpack Analysis - May 1, 2001

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
BIG THOMPSON BASIN	6	86	72
BOULDER CREEK BASIN	4	104	63
CACHE LA POUDRE BASIN	8	85	75
CLEAR CREEK BASIN	4	99	98
SAINT VRAIN BASIN	3	88	46
UPPER SOUTH PLATTE BASIN	16	97	95
TOTAL SOUTH PLATTE BASIN	39	92	80

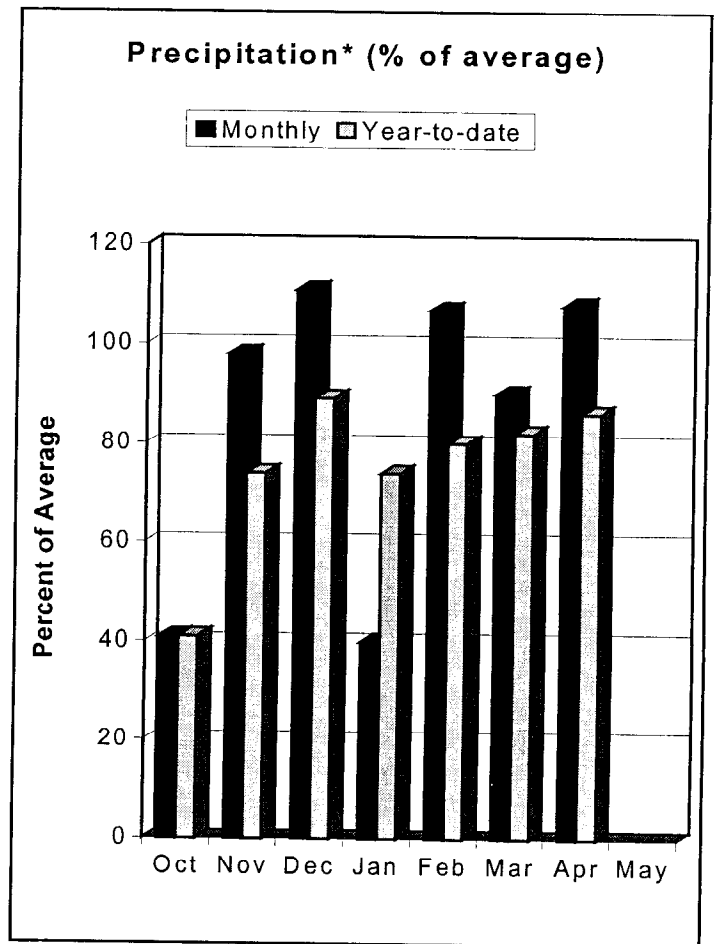
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
(2) - The value is natural volume - actual volume may be affected by upstream water management.

# YAMPA, WHITE, NORTH PLATTE AND LARAMIE RIVER BASINS as of May 1, 2001



\*Based on selected stations



These basins received appreciable amounts of snow during April, but warm temperatures have triggered the spring snowmelt, and the snowpack measurements are now significantly less than last month. Remaining accumulation in the North Platte Basin is at 74% of average, while the Yampa and White basin's accumulation is down to only 69% of average. The snowpack is highly variable ranging from only 59% of average in the Elk River Watershed, to 89% of average in the White River Watershed. There was 108% of average precipitation in the higher elevations of these basins during March, and the water year total is now 86% of average. The combined reservoir storage in these basins is at 104% of average, which is about 4% more than last year at this time. Most of the streamflow forecasts are nearly the same as last month's forecasts. They are extremely variable depending on location and snowpack conditions, ranging from only 51% of average Elkhead Creek near Elkhead, to 82% of average on the Yampa River above Stagecoach Reservoir.

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS  
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						
		Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
North Platte River nr Northgate	MAY-SEP	61	97	122	54	147	183	228
Laramie River nr Woods	MAY-SEP	66	93	111	87	129	156	127
Yampa R abv Stagecoach Res	APR-JUL	16.5	23	28	82	33	40	34
Yampa River at Steamboat Springs	APR-JUL	163	185	200	73	215	237	273
Elk River nr Milner	APR-JUL	136	170	195	65	222	265	300
Elkhead Creek nr Elkhead	APR-JUL	13.8	17.2	20	51	23	29	39
ELKHEAD CREEK blw Maynard Gulch	APR-JUL	17.3	27	34	58	41	51	59
Fortification Ck nr Fortification	MAR-JUN	2.52	3.40	4.00	47	5.28	7.15	8.50
Yampa River nr Maybell	APR-JUL	475	591	670	71	749	865	947
Little Snake River nr Slater	APR-JUL	65	85	100	65	116	142	155
LITTLE SNAKE R nr Dixon	APR-JUL	104	167	210	64	253	316	329
LITTLE SNAKE R nr Lily	APR-JUL	110	175	220	62	265	330	358
White River nr Meeker	APR-JUL	143	169	190	68	213	253	279

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS  
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
STAGECOACH	33.3	29.6	26.8	28.8
YAMCOLO	9.1	7.5	8.8	6.9

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS  
Watershed Snowpack Analysis - May 1, 2001

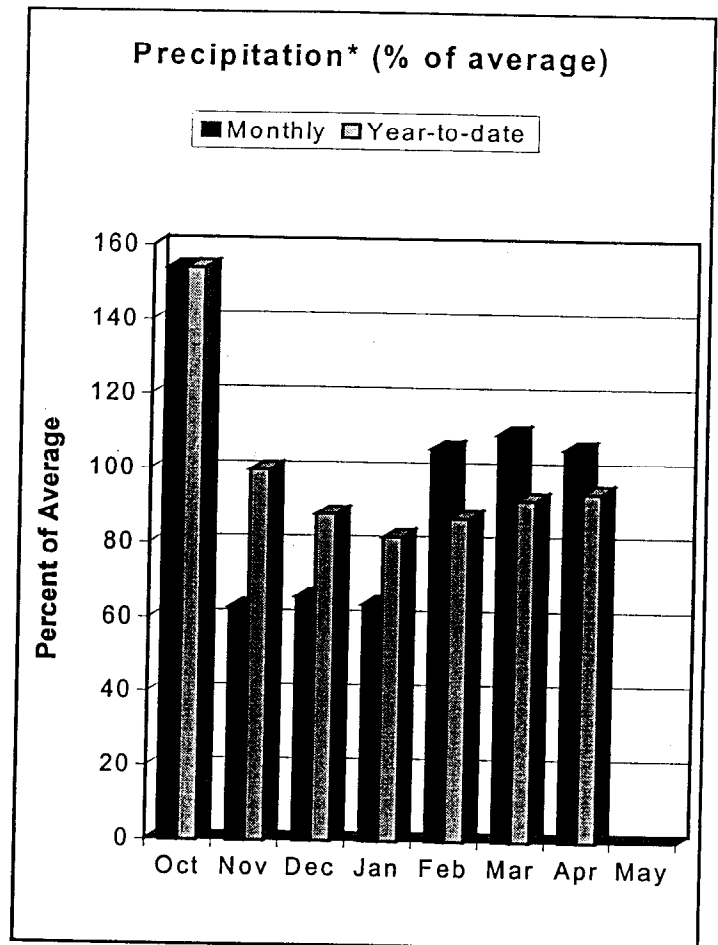
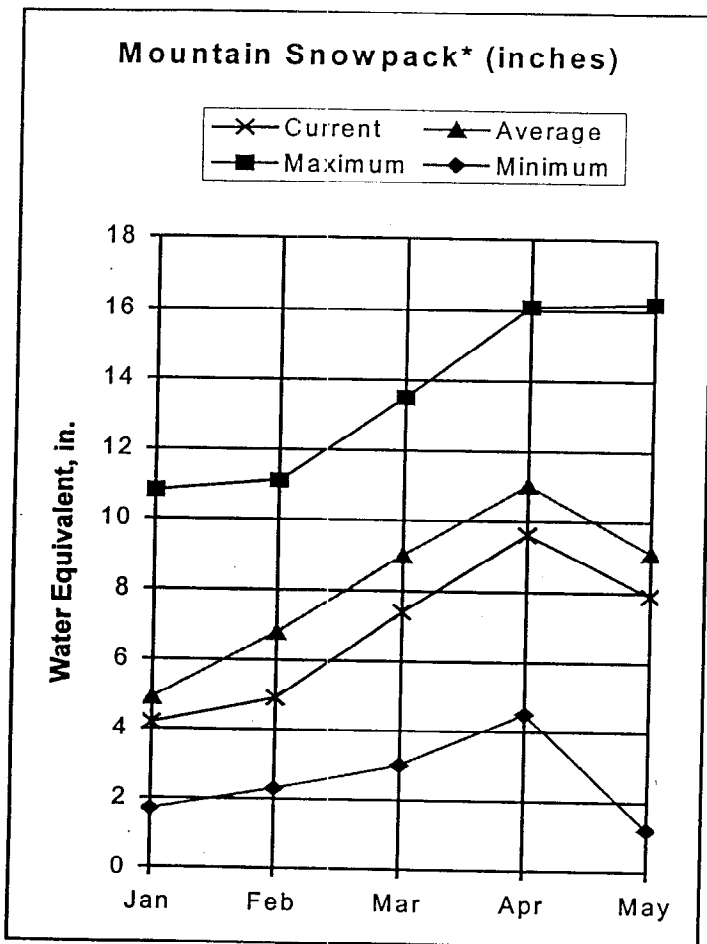
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
LARAMIE RIVER BASIN	4	88	72
NORTH PLATTE RIVER BASIN	5	77	73
TOTAL NORTH PLATTE BASIN	8	80	74
ELK RIVER BASIN	2	102	59
YAMPA RIVER BASIN	11	84	65
WHITE RIVER BASIN	4	114	89
TOTAL YAMPA AND WHITE RIV	14	90	69
LITTLE SNAKE RIVER BASIN	8	104	71

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
(2) - The value is natural volume - actual volume may be affected by upstream water management.

# ARKANSAS RIVER BASIN as of May 1, 2001



\*Based on selected stations

Some of the largest snow accumulation events of the season occurred during April in the Arkansas Basin, but despite the additional snowfall, the spring snowmelt is well under way and the measured snow accumulation is less on May 1 than on April 1. The basin's snowpack is 82% of average now, which is only 2% of average less than last month. The snowpack is highly variable and ranges from only 63% of average in the Cucharas and Huerfano watersheds, to 93% of average in the Upper Arkansas Watershed. Precipitation in the high country was 6% above average during April, and the water year total is now 94% of average. The combined storage among 12 major reservoirs is 159% of average for this time of year, but this is only 61% of last year's storage level. Most of the streamflow forecasts remain below average on May 1. Some have gone down from last month, while others have improved. They are highly variable depending on location and snowpack conditions, ranging from only 72% of average on the Cucharas River near La Veta, to 105% of average at the Inflow to Trinidad Lake.

=====

ARKANSAS RIVER BASIN  
Streamflow Forecasts - May 1, 2001

=====

Forecast Point	Forecast Period	<<----- Drier -----		Future Conditions -----		----- Wetter ----->>		30-Yr Avg. (1000AF)
		-----		Chance Of Exceeding *		-----		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Chalk Creek nr Nathrop	APR-SEP	10.8	17.4	22	76	26	33	29
Arkansas River at Salida	APR-SEP	173	216	245	83	274	317	297
Grape Creek nr Westcliffe	APR-SEP	2.8	10.6	16.0	80	21	29	20
Pueblo Reservoir Inflow	APR-SEP	203	267	310	79	353	417	394
Huerfano River nr Redwing	APR-SEP	10.2	13.0	14.8	99	16.6	19.4	15.0
Cucharas River nr La Veta	APR-SEP	4.3	7.3	9.4	72	11.5	14.5	13.0
Trinidad Lake Inflow	APR-SEP	20	31	39	91	47	58	43

=====

ARKANSAS RIVER BASIN  
Reservoir Storage (1000 AF) - End of April

=====

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
ADOBE	70.0	64.0	69.2	16.9
CLEAR CREEK	11.0	6.1	5.8	6.4
GREAT PLAINS	150.0	64.8	151.8	39.5
HOLBROOK	7.0	3.9	6.2	4.1
HORSE CREEK	28.0	0.2	24.0	7.6
JOHN MARTIN	335.7	169.4	324.4	78.9
LAKE HENRY	8.0	6.9	8.1	5.0
MEREDITH	42.0	25.2	36.6	14.1
PUEBLO	236.7	199.2	249.9	137.6
TRINIDAD	72.3	35.1	70.5	30.4
TURQUOISE	126.6	55.4	96.1	49.1
TWIN LAKES	86.0	43.9	54.0	33.1

=====

ARKANSAS RIVER BASIN  
Watershed Snowpack Analysis - May 1, 2001

=====

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
UPPER ARKANSAS BASIN	3	105	93
CUCHARAS & HUERFANO RIVER	4	107	63
PURGATOIRE RIVER BASIN	2	162	66
TOTAL ARKANSAS RIVER BASIN	8	110	82

=====

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

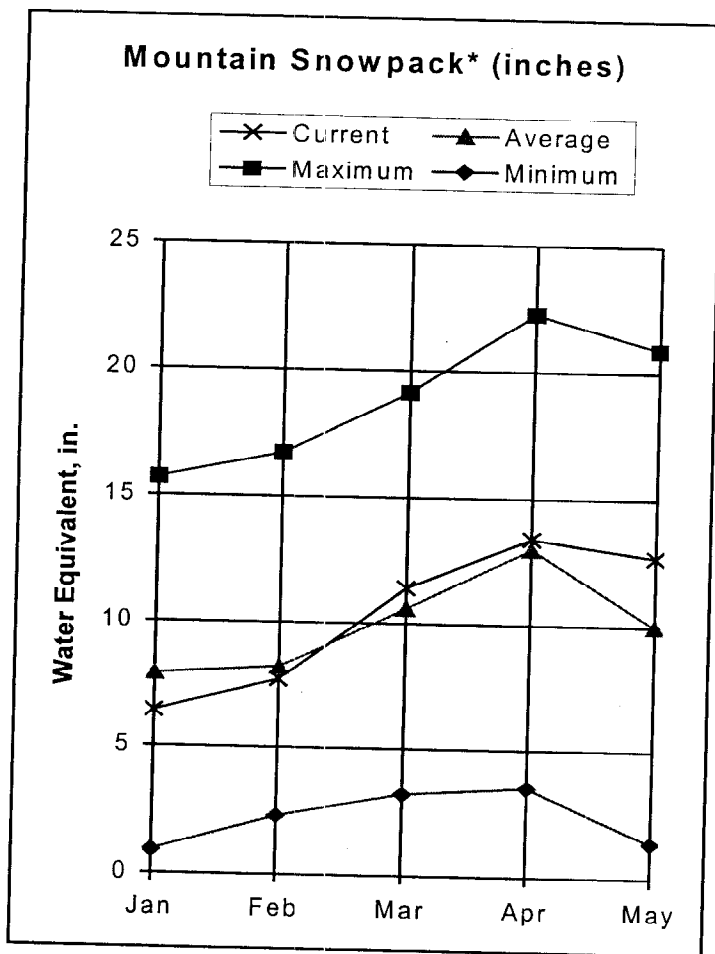
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UPPER RIO GRANDE BASIN  
Streamflow Forecasts - May 1, 2001

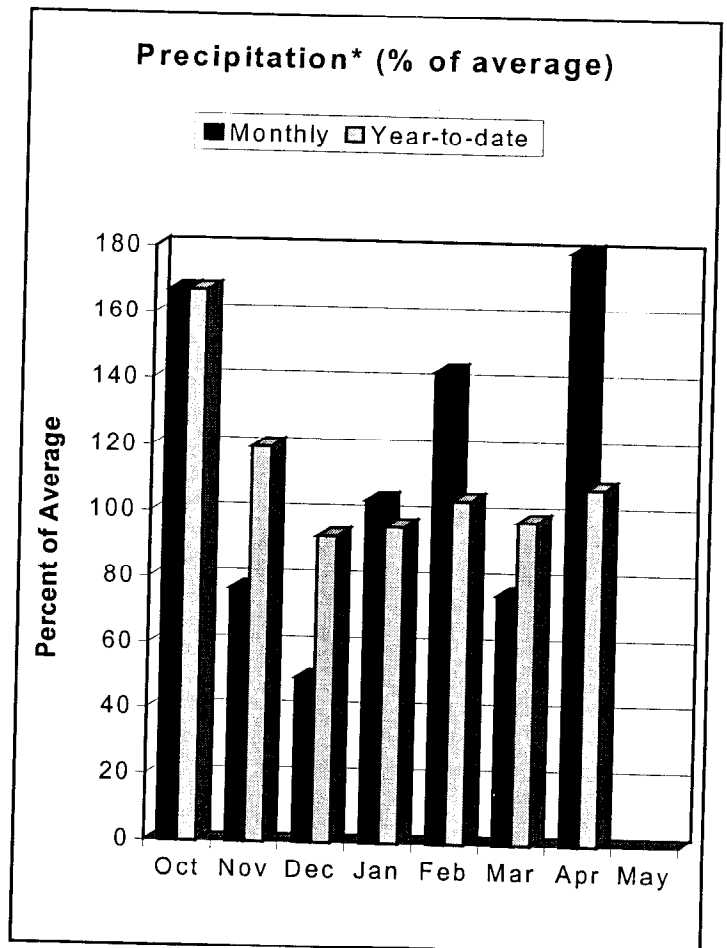
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Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		-----		Chance Of Exceeding *		-----		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Rio Grande at Thirty Mile Bridge	APR-SEP	154	163	170	128	177	188	133
Rio Grande Reservoir Inflow	APR-JUL	134	143	150	127	157	168	118
Rio Grande at Wagon Wheel Gap	APR-SEP	397	420	435	132	450	473	330

# UPPER RIO GRANDE RIVER BASIN as of May 1, 2001



\*Based on selected stations



The snowpack measurements in the Rio Grande Basin remain the highest in the state on May 1. Additional snow accumulation and slow melting rates in this basin during April have elevated the snowpack percent of average to 120%, which is an increase of 18% of average from last month. There is over three times the amount of snow in the basin then there was last year at this time. The snowpack ranges from 95% of average in the Culebra and Trinchera watersheds, to 129% of average in the Upper Rio Grande Watershed. Precipitation measurements in the higher elevations were 180% of average during April, and the water year total is now 108% of average on May 1. Reservoir storage is about 11% above average for this time of year, but is only 69% of the storage amount last year at this time. Stream forecasts for the runoff season have gone up slightly from last month for most of the forecast points, but most remain near, to much above average. Forecasts range from 86% of average on the San Antonio River near Ortiz, to 132% of average on the Rio Grande at Wagon Wheel Gap.

UPPER RIO GRANDE BASIN  
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						
				Chance Of Exceeding *				30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Rio Grande at Thirty Mile Bridge	APR-SEP	154	163	170	128	177	188	133
Rio Grande Reservoir Inflow	APR-JUL	134	143	150	127	157	168	118
Rio Grande at Wagon Wheel Gap	APR-SEP	397	420	435	132	450	473	330
South Fork Rio Grande at South Fork	APR-SEP	144	154	160	121	166	176	132
Rio Grande nr Del Norte	APR-SEP	620	653	675	130	697	730	520
Saguache Creek nr Saguache	APR-SEP	29	35	40	118	45	51	34
Alamosa Creek abv Terrace Reservoir	APR-SEP	62	70	75	109	80	88	69
La Jara Creek nr Capulin	MAR-JUL	5.73	8.04	9.60	112	11.16	13.47	8.60
Trinchera Water Supply	APR-SEP	24	32	37	123	42	50	30
Platoro Reservoir Inflow	APR-JUL	53	58	62	105	66	71	59
	APR-SEP	58	64	68	105	72	78	65
Conejos River nr Mogote	APR-SEP	187	207	220	110	233	253	201
San Antonio River at Ortiz	APR-SEP	9.4	11.9	13.7	86	15.7	18.8	16.0
Los Pinos River nr Ortiz	APR-SEP	63	69	74	103	79	85	72
Culebra Creek at San Luis	APR-SEP	15.6	21	25	125	29	34	20
Costilla Reservoir inflow	MAR-JUL	8.06	9.51	10.50	115	11.49	12.94	9.10
Costilla Creek nr Costilla	MAR-JUL	20	24	26	118	28	32	22

UPPER RIO GRANDE BASIN Reservoir Storage (1000 AF) - End of April					UPPER RIO GRANDE BASIN Watershed Snowpack Analysis - May 1, 2001			
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CONTINENTAL	15.0	8.0	7.4	6.3	ALAMOSA CREEK BASIN	2	355	99
PLATORO	53.7	14.4	29.5	15.9	CONEJOS & RIO SAN ANTONIO	4	396	118
RIO GRANDE	51.0	18.4	11.6	20.3	CULEBRA & TRINCHERA CREEK	5	541	125
SANCHEZ	103.0	28.1	45.1	17.8	UPPER RIO GRANDE BASIN	11	315	130
SANTA MARIA	45.0	9.4	20.3	10.0	TOTAL UPPER RIO GRANDE BA	23	347	122
TERRACE	13.1	7.4	10.7	7.1				

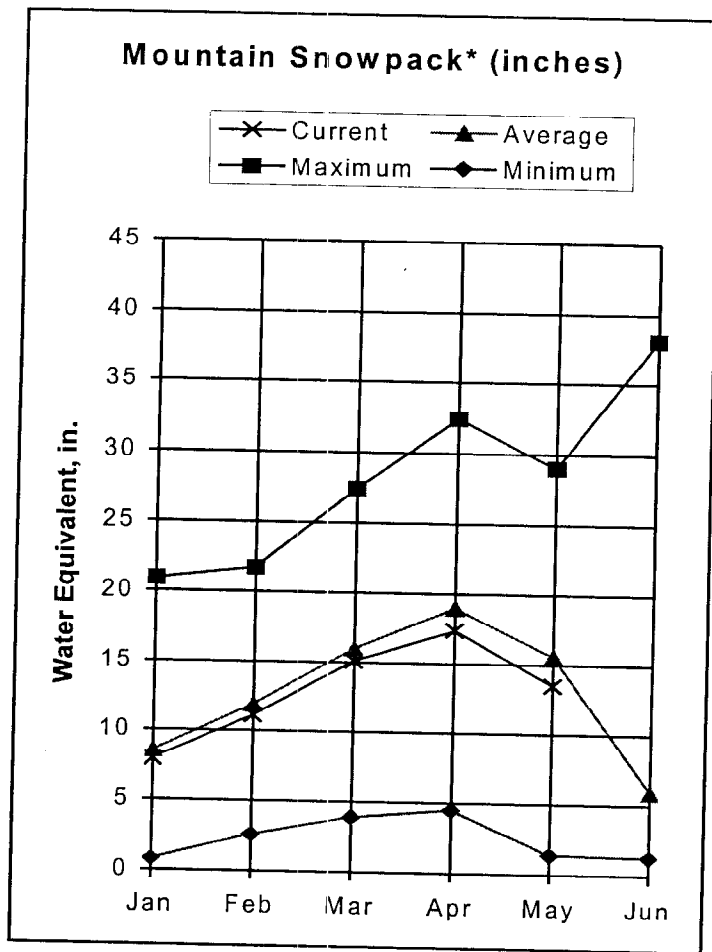
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

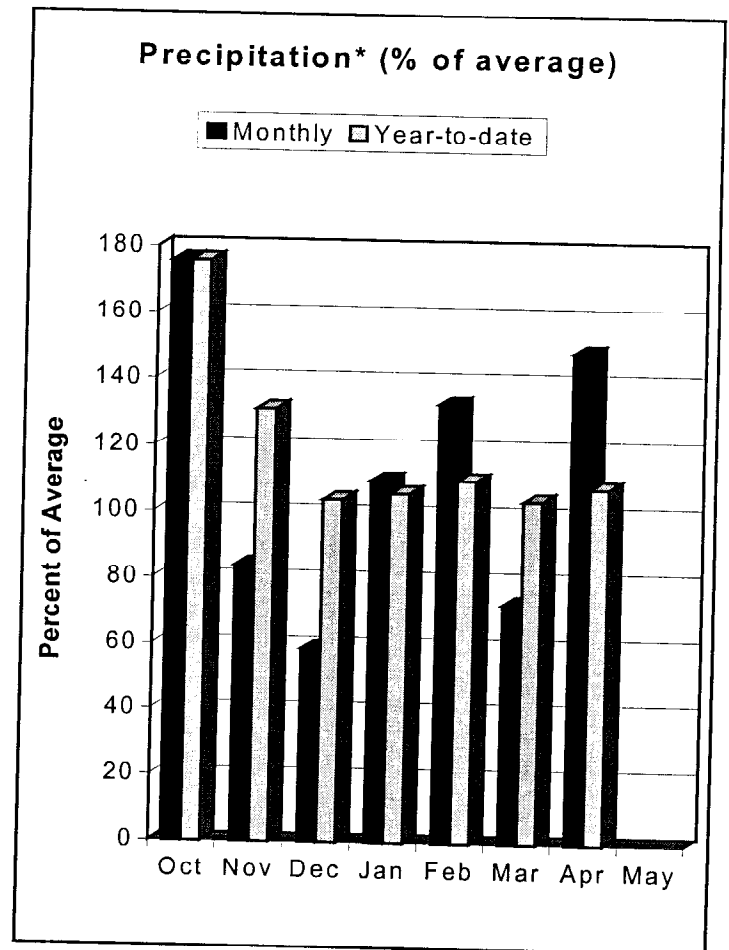
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.



# SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS as of May 1, 2001



\*Based on selected stations



While most of the basins in the state have snowpack percentages significantly less than last month, snow accumulation and slow melting rates in these basins during April have helped to hold the snowpack percent of average to 91% of average on May 1, which is 1% higher than last month. There is over twice as much snow in the basin as there was last year at this time. The snowpack is highly variable ranging from only 64% of average in the San Miguel Basin, to 114% in the San Juan Basin. Precipitation during April was 149% of average, and the water year total is now 108% of average on May 1. The combined reservoir storage level for 6 major reservoirs in these basins is only 74% of average for this time of year, which is nearly the same as last month. There is only 65% of the storage there was last year at this time. Streamflow forecasts have been reduced slightly from last month for many of the forecast points. They remain highly variable depending on location and snowpack conditions, ranging from 74% of average at the Inlet to Gurley Reservoir, to 122% of average at the Inflow to Vallecito Reservoir.

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS  
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		Chance Of Exceeding *		Chance Of Exceeding *		Chance Of Exceeding *		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Dolores River at Dolores	APR-JUL	147	178	200	81	222	253	246
McPhee Reservoir inflow	APR-JUL	173	210	235	83	260	297	283
San Miguel River nr Placerville	APR-JUL	68	87	100	82	113	132	122
Gurley Reservoir Inlet	MAY-JUL	6.9	9.3	11.0	74	12.7	15.1	14.8
	MAY			7.50	85			8.83
	JUNE			3.00	64			4.67
	JULY			0.50	38			1.32
Cone Reservoir Inlet	MAY-JUL	1.76	2.10	2.33	76	2.56	2.90	3.06
	MAY			1.60	98			1.64
	JUNE			0.53	51			1.04
	JULY			0.20	53			0.38
Lilylands Reservoir Inlet	MAY-JUL	1.03	1.58	1.95	80	2.32	2.87	2.45
	MAY			1.25	95			1.32
	JUNE			0.60	69			0.87
	JULY			0.10	37			0.27
Rio Blanco at Blanco Diversion	APR-JUL	46	54	59	109	64	72	54
Navajo River at Oso Diversion	APR-JUL	54	64	71	109	78	88	65
San Juan River nr Carracus	APR-JUL	324	394	445	117	499	585	382
Piedra River nr Arboles	APR-JUL	237	254	265	121	276	293	219
Vallecito Reservoir Inflow	APR-JUL	224	233	240	122	247	256	196
Navajo Reservoir Inflow	APR-JUL	766	864	930	121	996	1094	772
Animas River at Durango	APR-JUL	291	347	385	92	423	479	418
Lemon Reservoir Inflow	APR-JUL	51	58	62	109	66	73	57
La Plata River at Hesperus	APR-JUL	18.4	21	22	92	24	26	24
Mancos River nr Mancos	APR-JUL	26	34	40	100	46	54	40
	MAY			16.0	101			15.9
	JUNE			13.0	95			13.7
	JULY			4.00	87			4.60

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS  
Reservoir Storage (1000 AF) - End of April

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS  
Watershed Snowpack Analysis - May 1, 2001

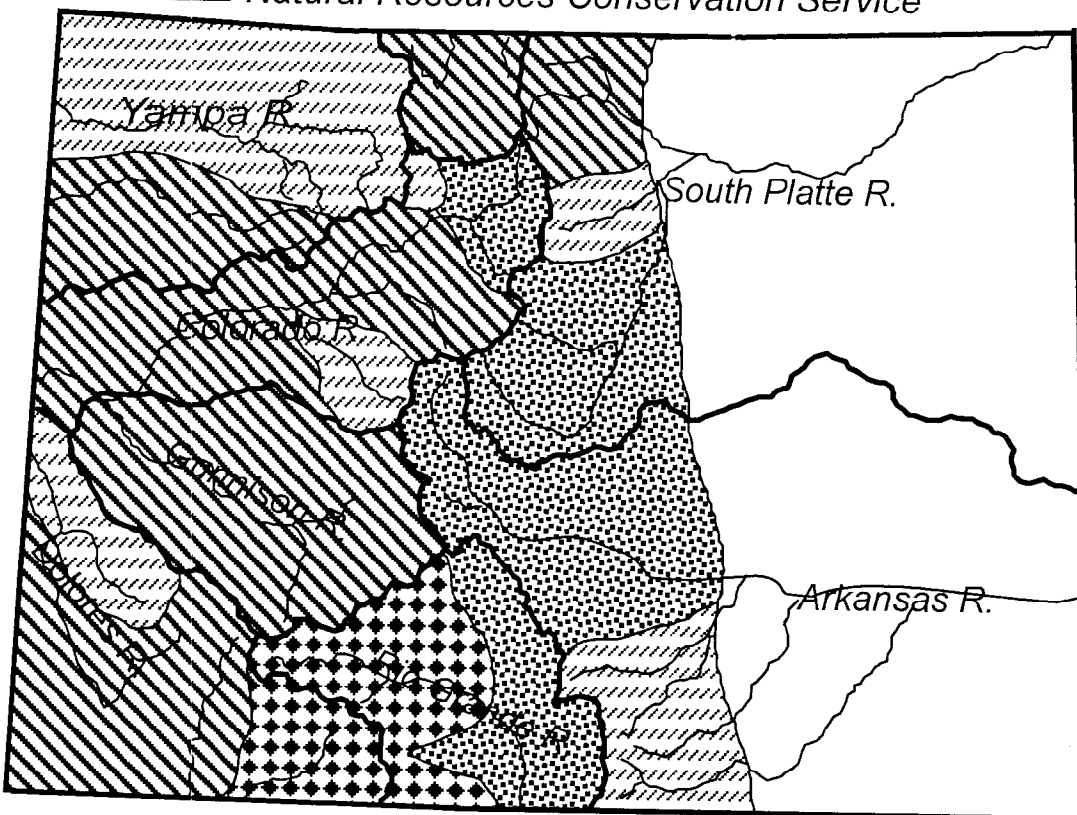
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GROUNDHOG	21.7	11.3	18.3	13.1	ANIMAS RIVER BASIN	9	187	90
JACKSON GULCH	10.0	4.6	9.4	7.1	DOLORES RIVER BASIN	5	147	72
LEMON	40.0	14.9	35.0	23.4	SAN MIGUEL RIVER BASIN	5	146	64
MCPHEE	381.2	252.9	352.9	340.0	SAN JUAN RIVER BASIN	3	301	114
NARRAGUINNEP	19.0	16.8	18.1	17.1	TOTAL SAN MIGUEL, DOLORES	21	197	91
VALLECITO	126.0	45.4	96.2	66.7	AN JUAN RIVER BASINS			

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1961-1990 base period.

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(2) - The value is natural volume - actual volume may be affected by upstream water management.



Natural Resources Conservation Service



## **Snowpack**

**May 1, 2001**

**Statewide: 84% of Average**  
**123% of Last Year**



**Much Above Average > 130%**



**Above Average 110% to 130%**



**Near Average 90% to 110%**



**Below Average 70% to 90%**



**Much Below Average < 70%**



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In addition to the basin outlook reports, water supply forecast information for the Western United States is available from the Natural Resources Conservation Service and the National Weather Service monthly, January through May. The information may be obtained from the National Resources Conservation Service web page at <http://www.wcc.nrcs.usda.gov/water/quantity/westwide.html>.

*Issued by*

**Pearlie S. Reed**  
Chief  
Natural Resources Conservation Service  
U.S. Department of Agriculture

*Released by*

**John Knapp**  
Acting State Conservationist  
Natural Resources Conservation Service  
Lakewood, Colorado



**Colorado**  
**Basin Outlook Report**  
Natural Resources Conservation Service  
Lakewood, CO

